

MARKETS, TRADE, AND RURAL DEVELOPMENT

The purpose of this Division is two-fold. One is to support research to enhance the global marketability and competitiveness of U.S. agricultural, forest, and fish products. Research includes development and/or application of methodologies to assess product preference, demand, and utilization by consumers and factors affecting competitiveness including resource availability, costs, new technologies, market structure, and risk. Public policy research is supported that evaluates the market development and competitiveness impacts and alternatives of fiscal, monetary, trade promotion, sustainable, human resource, research, and other programs and regulations.

The second purpose of the Division is to develop and/or apply research methodologies to problems affecting economic welfare and quality of living of rural communities and people by examining the effects of international, national, and local policies. Research involves comparative analysis of the impacts of policy options and alternatives on natural resource use, population distribution, and the structure of rural society. The goal is to develop new economic development opportunities to sustain rural communities and people in the United States.

MARKETS AND TRADE

Panel Manager - Dr. Timothy T. Phipps, West Virginia University
Program Director - Dr. Mark R. Bailey

The goal of this program is to support research aimed at assessing market preferences, demand, and utilization for various agricultural and forest products and commodities; determining the ability of the U.S. to compete for these markets; and assessing the impacts of new products and production technologies on U.S. competitiveness, the environment, and rural economies. Research was specifically encouraged to: (1) identify, describe and quantify the size of potential international markets; (2) ascertain the ability of the U.S. to compete in particular agricultural global markets; and (3) determine the benefits and costs of adopting new products and/or production/processing methods for agricultural and forest materials produced using sustainable and alternative agricultural and forestry practices.

9701906 The Economics of Livestock Waste and Its Regulation**Innes, R.D.****Grant 97-35400-4435****University of Arizona****Agricultural and Resource Economics****Tucson, AZ 85721-0023****\$77,000****2 Years**

Participants in this project will construct and analyze models of livestock waste management, their effects on the environment, and the economic efficiency properties of various governmental policies designed to mitigate adverse environmental impacts of livestock waste disposal. Analyses will consider effects of spills from waste storage facilities (as a result of both storm events and lagoon failures), environmental effects of manure disposal on surrounding croplands, and ambient effects of odors, gases and pests from livestock facilities. A primary focus will be to characterize an economically efficient spatial arrangement of livestock production, considering environmental effects, and the ability of different policies to promote efficiency in such spatial arrangements. Among policies that will be studied are (i) direct taxes on livestock operations, (ii) scale regulation that limits the number of animals allowed on a given number of acres, (iii) fertilizer taxes and manure subsidies, (iv) waste management subsidies to small operators, (v) liability for spill damages and/or water quality impairments, (vi) waste storage regulations, and (vii) nutrient management regulations, with enforcement costs. Empirical work will test hypotheses implied by the theoretical analysis, including the effects of manure use on cropland nutrient levels.

9701876 Determinants of Foreign Direct Investment and Trade in U.S. Processed Food**Industries****Carter, C.A.****Grant 97-35400-4407****University of California, Davis****Department of Agricultural and Resource Economics****Davis, CA 95616****\$83,000****2 Years**

It is generally accepted that the United States has a strong comparative advantage in raw agricultural commodities due to its relatively large endowment of cultivable land and favorable climate. Some have suggested that the United States also has a comparative advantage in processed food. However, there are different views on the dynamics of the U.S. market share in world processed food trade. In this respect, it is important to understand the determinants of trade and foreign direct investment in processed food industries in order to identify new trade opportunities. Most of the existing studies model processed food trade in the context of a partial model, using either traditional comparative advantage theory, foreign direct investment theory, or the theory of intra-industry trade. However, none of these approaches examines the simultaneous nature of these theories. Even if production costs are similar in different countries, firms may prefer to produce close to markets. In this respect, one-way or two-way foreign direct investment operates as a substitute for trade. Moreover, monopolistic competition results in intra-industry trade, a phenomenon which cannot be explained by the traditional theory of comparative advantage. In this project, we are proposing to develop a comprehensive theoretical and empirical model of trade and foreign direct investment. We will combine the theories of comparative advantage, foreign direct investment, and intra-industry trade, in order to assess the determinants of trade and foreign direct investment in processed food industries. Our results will potentially contribute to enhanced U.S. competitiveness by providing a better understanding of new trade opportunities and how U.S. exporters might benefit from these opportunities.

9701889 End of Foot and Mouth Disease in Argentina and Uruguay: Implications for the U.S.**Jarvis, L.****Grant 97-35400-4489****University of California, Davis****Department of Agricultural & Resource Economics****Davis, CA 95616****\$65,000****2 Years**

The proposed research will 1) analyze the impact of ongoing changes in Foot and Mouth Disease (FMD) sanitary status in Argentina and Uruguay and their recognition by importing countries on world markets, with particular interest on the effects on

U.S. beef exports and imports and on U.S. prices and welfare effects; 2) analyze the growing trade in beef cuts as opposed to carcasses; 3) analyze the effects of trade liberalization being achieved as a result of the Uruguay Round of the Gatt Agreement and related changes, and the formation of regional trading blocs; and 4), analyze the effects of rapid demand growth for beef products in Asia. The research will produce information useful for all participants in the U.S. meat industry (producers, packers, importers, exporters, researchers), as well as Federal and State governments.

The study will create a data base on agricultural policies related to beef in several countries, especially Argentina, Uruguay, the United States, and several East Asian countries, including existing sanitary restrictions on trade (and recent and expected changes thereto), minimum trade access commitments, and subsidy programs that affect trade flows. The existence of improved technologies for beef production in South America, the conditions for their adoption, and the potential for integration between the FMD-endemic and FMD-free markets will be evaluated as well. Finally, the expansion potential of trade in beef cuts will be evaluated. This information will be utilized to initiate construction of a global econometric model that will permit quantitative analysis of these factors.

9701880 Bycatch and the Social Value of Food Production in Multispecies Fisheries

Larson, D.M.

Grant 97-35400-4439

University of California, Davis

Department of Agricultural and Resource Economics

Davis, CA 95616

\$80,000

2 Years

A very significant and growing problem in food production from fisheries is bycatch (desirable fish caught along with the target species) and discarding of same in multispecies fisheries under open access management. In the United States this problem is perhaps most acute in the Bering Sea/Aleutian Islands (BSAI) region off Alaska, and has recently generated a great deal of public and political scrutiny.

This project provides a systematic approach for evaluating and resolving this problem by applying modern dual methods of fisheries production analysis to data collected by the National Marine Fisheries Service on multispecies groundfish operations in the BSAI region. Multiproduct profit functions are estimated for the fisheries with major bycatch volumes or rates, using a micro- econometric approach to estimate the weekly cost and profit functions for the major groundfish-fisheries. These short-run profit functions are identified through estimation of the associated quasi-rent share equations for each of the principal species that make up the multispecies catch. The estimated short-run profit models are used to predict the economic costs of achieving bycatch reduction goals, and the way to achieve them most cost-effectively. These costs can be compared with the benefits of bycatch to gain perspective on the appropriate magnitudes of catch and bycatch quotas. The work addresses needs related to the benefits and costs of regulations; the impact of public policy alternatives on food industry performance; impacts of changing consumer demands for fish products on raw commodity production; and the development of new or enhanced methods to improve the assessment of public policy alternatives and decision making.

9701875 Planning Workshop for the Agricultural Chapters of Historical Statistics of the United States Millennial Edition

Olmstead, A.L.

Grant 97-35400-4400

University of California, Davis

Institute of Governmental Affairs

Davis, CA 95616-8617

\$9,000

1 Year

This grant will support a research workshop for the agricultural chapter of the *Historical Statistics of the United States: Millennial Edition* to be published by Cambridge University Press in the year 2000. Alan L. Olmstead (UC Davis) is the chapter editor and project director. Julian Alston and Daniel Sumner (UC Davis), Bruce Gardner (University of Maryland), and Paul Rhode (UNC Chapel Hill) are sub-chapter editors. The objective of this workshop is to bring experts in the field of agricultural data together to work with the chapter editors and help define the scope of this important work. The workshop will be held on August 9-10, 1997 at the University of California, Davis, and will be co-sponsored by the Institute of Governmental Affairs and the Agricultural History Center. The *Historical Statistics of the United States* is the standard reference work for economic, political, and social data pertaining to American history. The last edition (1975) provided data through 1970. There is a crying need to both update the existing time series and expand coverage to include the results of recent research. This project aims to fill this void by producing expanded print and electronic editions. Overall, this workshop will help lay the foundation for a new, easily accessible statistical summary of American agriculture that will be widely used by scholars and the general public.

9701848 Processor Market Power and the Economics of Mandated Commodity Research and Promotion Programs
Sexton, R.J.**Grant 97-35400-4399****University of California, Davis**
Department of Agricultural and Resource Economics
Davis, CA 95616**\$30,000**
2 Years

Mandated programs using check-offs for funding R&D and generic advertising of agricultural commodities are increasingly important and increasingly controversial. During recent years expenditures under mandated commodity programs have grown rapidly. U.S. commodity groups now spend on the order of a billion dollars annually on these programs. The controversy stems from the mandatory nature of the programs, funded by commodity checkoffs, and from uncertainty concerning who benefits and by how much.

A critical issue is the effectiveness of collective (generic) promotion compared with individual (brand) promotion that may be used in the absence of the mandated program. Similar questions may be raised about R&D and technical change. In order to answer these questions, an understanding is required on the determination of individual firm investments in both the collective and private good elements of research and promotion, and measures of the effectiveness of these investments on each shifting demand and costs.

This project will develop imperfect competition models of a commodity market, where processing firms may have market power in raw product procurement and/or processed product sales. The models will be solved to determine the optimal investments in both individual and collective promotion and/or R&D, and show how these results depend on the key parameters that characterize the market, including degree of competition, elasticities of supply, demand, demand response to promotion, and supply response to research. We then will consider typical values of parameters for industries of importance and conduct simulation analyses. Finally, case studies of key industries will be conducted.

9701862 Impacts of Economic Reform and Integration on U.S. Agricultural Trade
Weyerbrock, S.**Grant 97-35400-4408****University of Delaware**
Department of Food and Resource Economics
Newark, DE 19717**\$80,000**
2 Years

Russia and Eastern Europe have been important destinations for U.S. agricultural exports. The future of these markets will be strongly affected by internal economic reforms and further integration in Europe such as an enlargement of the European Union (EU) to the East and a Russia/EU preferential trade area. These developments will affect the U.S. competitiveness not only in Europe but also worldwide because they may turn Russia and Eastern European countries from being U.S. customers to being serious competitors on world agricultural markets.

The proposed project addresses three questions: (1) How do reform and integration in Europe affect U.S. food exports to Europe? (2) How do they affect U.S. competitiveness on world agricultural markets? (3) What are appropriate U.S. policy responses to economic reform and integration? A 12-region, 14-sector general equilibrium model will be developed to address these questions. The model will focus on agricultural sectors and cover, among others, the U.S., Eastern Europe, Russia, and the EU. Policies will be modeled explicitly, whenever appropriate. The model will capture important characteristics of reforming economies.

The research will yield a comprehensive analysis of the possible impacts of reform and integration. It will help policymakers in evaluating alternative policy responses to changes in Europe and exporters in assessing the future market potential. The project will also contribute to advances in modeling techniques.

9701909 Global Food Demand in the Year 2020: Implications for US Exports
Hertel, T.W.; Eales, J.; Prekel, P.**Grant 97-35400-4752****Purdue University**
Department of Agricultural Economics
West Lafayette, IN 47907-1145**\$119,000**
2 Years

As we enter the 21st century, the pattern of global food demand is expected to change significantly. Rapid income growth in China, Southeast Asia and India, is expected to add to the purchasing power of billions of people, thereby increasing not only the total quantity of food consumed, but also the quality and value-added in individuals' diets. These changes signal a significant shift in the value of global purchasing power away from the relatively wealthy OECD countries, towards the industrializing economies of Asia. Many international agencies have sought to analyze the broad effects of this shift in the effective demand for food. Unfortunately, these studies have all been plagued by the same limitation: they assume that poor countries will continue spending their newly earned income on food the way they have spent their money in the past. They do not account for the fact that poor countries eventually become rich, and tend to modify their demand for food accordingly. This study will develop estimates of the process by which the lower income countries modify their food demand as they become wealthier. This work

will then be combined with a model of global production and trade in order to draw out the implications for US exports of both high- and low-value-added food products in the year 2020.

9701863 The Impact of Tariff and Non-Tariff Barriers on Trade in Agricultural Commodities: A Desegregated Approach
Thursby, J.G.; Haveman, J.D. **Grant 97-35400-4596**

Purdue University
Department of Economics
West Lafayette, IN 47907

\$50,000
2 Years

We study the effects of tariff and non-tariff barriers (NTBs) on trade in agricultural commodities using data at the 6-digit level. The data allow for analysis on narrow commodity categories. We can obtain estimates of both the direct and diversionary impact of barriers on imports. Analysis of multiple commodity groups allows for generalities not possible using case studies. In addition to an analysis of the multiple effects of trade barriers, there are other areas we will address. Division of countries based on stage of economic development allows for a comparison of effects of barriers by stage of development. The formation of regional trading "blocs" is considered to be a major policy issue for the future. By collecting importers and exporters into potential blocs we can study the efficacy of trade barriers among nations within these blocs versus nations outside the blocs. A barrier imposed against an importer does not necessarily imply gains by domestic producers. A barrier may divert trade to another importer. An understanding of the trade diverting effects of barriers will provide information on the efficacy of current efforts to expand agricultural trade. The data allow a measure of differential effects trade of the various types of barriers. Finally, it is widely accepted that the level of NTBs has risen in recent decades, due, in part to the reduction in tariffs levels from the GATT negotiations. Our approach will shed some light on the magnitude of this problem.

9701854 Assessing the Potential for U.S. Meat and Grain Exports to China
Hayes, D.J.; Fuller, F.H. **Grant 97-35400-4595**

Iowa State University
Department of Economics
Ames, IA 50011

\$135,000
2 Years

This research examines the impact of domestic agricultural and trade policies in China on the competitiveness of U.S. meat and grain exports to China. Moreover, it assesses the potential importance of the Chinese market to U.S. producers and processors of agricultural products. Of particular interest is the trade-off that exists in China between self-sufficiency goals and price inflation when trade policies hinder the importation of either grains or meats. The research objectives are the following: 1) Development of a consistent time series for Chinese livestock production and consumption, feed conversion, crop area, and agricultural prices from existing data and new data collection; 2) Construction of a regional policy simulation model of China's grain, oilseed, and livestock sectors; 3) Assessment of the importance of the Chinese market to U.S. grain and meat producers by simulating various Chinese agricultural and trade policies; and 4) Examination of the impact of World Trade Organization accession, self-sufficiency policies, and Yuan appreciation on the competitiveness of U.S. meat and grain exports to China.

Inasmuch as the data set constructed through this research corrects existing discrepancies, the data will be valuable for future research on Chinese agricultural production. The assessment of the magnitude and direction of future Chinese agricultural trade provides information that will be useful to U.S. firms in appraising the cost and sustainability of agricultural exports to China. Likewise, the analyses of agricultural and trade policies will identify policy environments in which U.S. exports of meat and grain products to China are most competitive.

:

9701846 Benefits and Costs of Pre- and Post-Harvest HACCP for the Pork Industry
Fox, J.A.; Boland, M.A.; Brester, G.W. **Grant 97-35400-4440**

Kansas State University
Department of Agricultural Economics
Manhattan, KS 66506-4011

\$145,000
3 Years

The overall objective is to determine the benefits and costs of new food safety (HACCP) regulations for pork producers, slaughter plants, and consumers. These new regulations impose additional costs on the meat processing industry. These costs include investments in technologies (e.g., steam pasteurization) and costs associated with increased monitoring, pathogen testing, record keeping, and worker training. Some of these costs may place a relatively greater burden on smaller plants and, perhaps, threaten their economic viability. We will analyze the costs of designing and implementing a pre- and post-harvest HACCP plan for a small to medium-sized, cooperatively-owned pork slaughter plant. The HACCP plan will be integrated with a total quality management (TQM) program that maintains identity on animals through the production process. TQM programs may be more easily adapted to smaller plants. Resulting product quality and consistency improvements may provide a competitive advantage over larger plants. Thus, smaller plants may be able to offset the adverse impacts of new regulations and maintain economic viability. To investigate this possibility, we will measure the premium that consumers would pay for quality assurances implicit

in pork produced under a combined HACCP/TQM program. We will also quantify the impacts of pre-harvest HACCP requirements on different sizes of producers and investigate potential impacts on industry structure. A unique collaboration between a producer-owned pork slaughter plant cooperative, two retailers, and the cooperative's pathogen and residue testing laboratory will be used to accomplish these goals.

9701885 Economic Consequences of Farmers' Contracts with Nonfarm Enterprises**Gardner, B.L.****Grant 97-35400-4632****University of Maryland****Department of Agricultural and Resource Economics****\$145,000****College Park, MD 20742****2 Years**

This project will collect survey data on farms which have contractual arrangements for the marketing and production of agricultural commodities, and analyze the differences between these farms and similar farms which do not have such contractual arrangements. Contracting is beneficial to the extent it increases efficiency, but creates problems to the extent that traditionally organized smaller farms have to make difficult adjustments and compete with integrated operations. Concerns have also been raised about market power of contractees as compared to farmer contractees, because of the large size and small number of contractors in some areas and commodities, coupled with large fixed costs of contractees. Econometric analysis of incomes of contractees and contractors will be carried out using individual farm data. The project will be a collaborative one between the University of Maryland, ERS, and NASS over a two year period. The research will first analyze contracting in hogs in 1994 and 1995, where a mix of production contractors and independent operators exists. Then we will study contracting in poultry and eggs, fruits and vegetables and grains separately, and finally analyze a pooled sample of about 1,000 farms in 1991/96, including both contracting and independent operations.

9701851 Case Studies of Food Quality Regulation Under Trade Agreements**Caswell, J.A.****Grant 97-35400-4527****University of Massachusetts, Amherst****Department of Resource Economics****\$65,000****Amherst, MA 01003****2 Years**

The goal of this project is a better understanding of the impact of recent international trade agreements that aim to control non-tariff barriers to trade arising from food quality regulation. Efforts to control such non-tariff barriers are included in the most recent round of the General Agreement on Tariffs and Trade (GATT), which established the World Trade Organization (WTO), trading block agreements such as European Union (EU) and the North American Free Trade Agreement (NAFTA); and other bilateral agreements. These agreements pay special attention to the potential role of sanitary (food safety) and phytosanitary (plant and animal safety) (SPS) standards and technical standards (TBT) as barriers to trade. Our project will conduct detailed case studies of the current and likely future impacts of efforts to control non-tariff barriers in two regulatory areas: 1) Hazard Analysis and Critical Control Point (HACCP)-based regimes for ensuring microbiological food safety (an SPS regulatory program); and 2) labeling regulations as a means of informing consumers about food product quality and influencing markets for food quality (a TBT regulatory regime). The case studies will include: a comparative analysis of the level of compatibility in regulatory programs attained under different trading relationships, including how each manages questions of equivalency of programs; an analytical method for evaluating to what extent non-tariff barriers arise from particular regulations; an assessment of the trade flow impacts of the regulations; and an assessment of the impacts of these regulations and rapprochement efforts on food quality.

9701888 Impacts of NAFTA on the U.S. Textile and Apparel Industries: Implications for Rural Development**Amponsah, William A.****Grant 97-35400-4442****North Carolina A&T State University****Department of Agricultural Economics****\$118,000****Greensboro, NC 27411****2 Years**

With the signing of the North America Free Trade Agreement (NAFTA), and the expected decline of trade barriers for textiles and apparels, it is hypothesized that U.S. manufacturers and exporters have the potential to gain a greater share of the market throughout North America. However, of concern are the flows of capital and investment in Mexico, and the resulting implications upon labor migration, wages rates, social service costs, interest rates, exchange rates, employment, and economic growth rates. The major research goal of this project is to assess the impacts of NAFTA's policies on the competitiveness of the U.S. textile and apparel industries. Specific objectives are: 1) To evaluate the factors affecting textile and apparel trade; 2) To determine the impacts of NAFTA upon the trade competitiveness of the U.S. textile and apparel industries; 3) To analyze management attitudes in regards to seeking new markets; and 4) To derive implications from the trade performance of U.S. textiles and apparel industries for rural development.

A survey will be conducted to assess perceptions within the U.S. industries about the factors affecting trade competitiveness and performance of the listed commodities in the Mexican and Canadian markets. Managerial attitudes on entering new markets will be assessed, and implications from the performance of U.S. textile and apparel exporters as a result of NAFTA will be derived for the viability of the predominantly rural communities in which they are located.

9701871 Transparency and Competition in International Grains

Wilson, W.W.; Johnson, D.D.

Grant 97-35400-4436

North Dakota State University

Department of Agricultural Economics

Fargo, ND 58105-5636

\$105,000

2 Years

Important problems that have emerged in recent trade policy discussions are price transparency and discrimination. These have been a concern in a number of areas including: 1) the GATT negotiations with reference to State Trading Enterprises (STEs); 2) the US/Canada Joint Commission on Grains; and 3) to U. S. growers and trading firms. Recognition of the importance of price transparency has grown in recent years, in part due to the competitive environment that has developed between private trading firms and STEs. Despite growing interest among policy makers and organizations, the concept of price transparency has not been clearly developed, and its economic implications are not well understood.

The lack of transparency is recognized as a problem not only in international grain trading, but in other areas of the agricultural marketing system. However, bilateral disputes over U.S./Canada grain trade have heightened interest in this issue. The research proposed here will evaluate the implications of the lack of transparency for private traders engaged in international competition and producers, and assess its significance for U.S. policy makers. The proposed research addresses institutional factors affecting U.S. competitiveness. It will focus on how industries can successfully compete in increasingly open domestic and foreign markets, and will evaluate national and international policies and regulations affecting competitiveness.

9701866 A Comparative Study of Food Processing Productivity in the United States, Canada and Mexico

Buccola, S.T.; Kerkvliet, J.

Grant 96-35400-3619

Oregon State University

Department of agricultural and Resource Economics

Corvallis, OR 97331-3601

\$50,000

2 Years

Reduced barriers to trade between the United States, Canada, and Mexico will increase competitive pressures on food processors in all three nations. These pressures likely will bring substantial changes in factor deployment and processing technology, as firms seek to reduce costs while catering to new consumer markets. Payments to capital, labor, and raw farm products will be affected accordingly. A key element of each country's success in adapting to the new competition will be its ability to improve productivity, namely its output value per unit of input

To improve our understanding of such forces, we will develop two sets of cost-based econometric models of productivity differences, one between the United States and Canada, and the other between the United States and Mexico. The models will account explicitly for any disequilibrium in capital markets and for the influence of pollution control regulations on relative productivity. We will employ the models to test hypotheses about the impact on relative productivity of policy-induced structural adjustments, capital market disequilibrium, and environmental regulations in the three countries. The results will give us a better understanding of the effects on food manufacturing of increased economic integration in North America.

We have assembled much of the data necessary for the study, and plan to complete the Canada-U.S. portion of the analysis by March 1998. The Mexico-U.S. portion should be completed by September 1999.

9701847 Incentives for Health Claim Research

Childs, N.M.; Pan, J.

Grant 97-35400-4528

St. Joseph's University

Food Marketing, Mathematics

Philadelphia, PA 19131

Strengthening Award

\$110,000

2 Years

The Nutrition Labeling and Education Act (NLEA) permitted the use of approved health claims on the food label, which was designed to fulfill the FDA's new education mandate under the NLEA, and to encourage consumers to choose healthier foods. Under the existing NLEA format, all health claims are generically worded and available to all products whose nutrition profiles qualify for the use of claims, regardless of who invested in the research. This "publicness" of the health claims has not spurred a major investment in private sector nutrition research.

Using both empirical market analysis and market share models, we will document the usage of health claims in food industry, study the competitive strategies of companies in the current market environment, compare the behaviors of market dominant food cooperatives and individual non-dominant food processors, and provide further explanation to the current low level of health claim activities.

Interpolating the data from empirical market analysis, quantitative equilibrium models will be constructed to assess incentive options such as market exclusivity, licensing and tax incentives. Computer simulation will be performed for the equilibrium outcomes on some of these options under various market situations. Our objective is to develop appropriate incentive policies for nutrition research.

9701868 The Role of Uncertainty in Agricultural Commodity Prices**Stefanou, S.E.; Considine, T.J.****Grant 97-35400-4438****Pennsylvania State University****Department of Agricultural Economics & Rural Sociology****University Park, PA 16802****\$25,000****1 Year**

Understanding the role of uncertainty in agricultural commodity markets is important for public and private decision making. As prices vary with supply and demand shocks, speculators, producers, and consumers take positions in futures and options markets. As a result, equilibrium prices for these derivatives reflect the markets perception of uncertainty. This project develops a framework for understanding this linkage between uncertainty and commodity price dynamics.

The focus in our analysis is on storage, which plays a pivotal role in agricultural commodity markets by balancing supply and demand across time. Producers may hold inventories even when current prices exceed expected prices because they may earn a convenience yield on stock holding. The theoretical model developed in this proposal shows that the total return from holding stocks also includes an expected capital gain.

Our initial empirical application will involve nonrenewable resource commodities, including crude oil and natural gas. We will produce a preliminary report containing three deliverables. The first reports on the prospects for acquiring appropriate inventory and price data for agricultural commodities. The second is an assessment of the feasibility and robustness of the econometric models based upon an application to nonrenewable resource commodities. The final item proposes refinements of our modeling and estimation strategy by capitalizing on what we have learned during this feasibility stage.

9701898 Imperfectly Competitive Trade in Forest Products**Love, A.; Burton D.M.; Shumway, R.****Grant 97-35400-4441****Texas A&M University****Department of Agricultural Economics****College Station, TX 77843-2124****\$93,000****2 Years**

NAFTA recently became law and continues earlier trade liberalization trends among the U.S., Mexico and Canada. This study will examine competitiveness and economic interrelationships in domestic forestry markets and trade among NAFTA trading partners. Because forest products industries are concentrated as a few large firms have large market shares, forest products trade markets may have imperfectly competitive characteristics. Econometric models of the U.S., Canadian and Mexican forestry sectors will be estimated using a profit-maximization approach to international trade. This technique will be modified to account for the potentially imperfectly competitive nature of forest products markets. This combination of approaches will permit an evaluation of forest products industry competitiveness in both domestic markets and in international trade.

Two distinct forestry sectors will be modeled -- timber production and the processing sector. These sectors are connected as output from the timber sector is input into the processing sector. Because output from either sector can be exported or consumed domestically, output will be differentiated into traded and non-traded categories. The timber production sector will include industrial, nonindustrial and public production. The processing sector will model pulp, paper, sawtimber, and other forest products. Statistical tests will determine the appropriate level of aggregation across production processes and across timber production regions. Imports will be treated as additional inputs in the importing sector while exports will be treated as outputs from the appropriate sector. The resulting model will be used to investigate the effects of concentration on industry competitiveness and the impacts of trade liberalization on forest products markets and the forestry sectors in the three NAFTA nations.

9701881 China's Urban Consumer Demand for Livestock Products and Edible Oils Implications for U.S. Export**Halbrendt, C.; Wang, Q.****Grant 97-35400-4437****University of Vermont and State Agricultural College****Department of Community Development and Applied Economics****Burlington, VT 05405****Strengthening Award****\$115,000****2 Years**

This study analyzes the changes in China's urban consumer demand for livestock products and edible oils and assesses the potential impacts of such changes on U.S. food exports to China. U.S. agricultural trade balance with China reversed from a deficit of \$74 million in 1993 to a surplus of \$2,154 million in 1995 and this significant turnaround is important for the U.S. to narrow its overall trade deficit with China. As China moves towards a market economy, its institutional trade barriers are declining and food trade behavior is increasingly dependent on consumer demand. It is becoming more important for U.S. exporters to

understand the underlying economic and cultural factors of the Chinese markets, this study focuses on urban demand because urban residents are the primary consumers of China's imported food products and their proportion in China's total population has increased from 18% in 1978 to 30% in 1995. A consumer survey will be conducted in three Chinese cities with the assistance of our Chinese collaborators and quantitative demand models will then be used to analyze the impacts of economic and cultural factors on consumer food demand and preference for imported food products. Three major results are expected from this study; a detailed database of Chinese urban consumption of livestock products and edible oils and information on consumer valuation of imported food products, estimates of demand elasticities and sociodemographic effects for individual food commodities, and information that can be used to develop effective marketing strategies to promote U.S. food exports to China.

RURAL DEVELOPMENT

Panel Manager - Dr. Deborah Tootle, Louisiana State University

Program Director - Dr. Mark R. Bailey

Rural areas dependent on agriculture, forestry, and other natural resource based industries have been subjected to various forces that reduce their economic vitality. This program calls for theoretical and empirical research to help understand the ways these forces affect economic vitality and evaluate how well public policies might restore this vitality. Research is supported in three general areas: (1) new theoretical and methodological studies to focus on improving the social and economic well-being of rural families and communities at the national, regional and local levels; (2) empirical studies to identify the forces that influence population changes, employment, wage levels and other indicators of social and economic viability; and (3) empirical evaluations of methods and policies to diversify the economies of rural areas, particularly those highly dependent on agriculture, forestry and other natural resource extractive industries.

9701832 Collaboration for Sustainable Development: Activists, Agents, and Academics in Alabama

Bailey, C.; Bliss, J.C.

Grant 97-35401-4365**Auburn University****School of Forestry****Auburn, AL 36849-5418****\$150,000****3 Years**

The proposed project is designed to identify non-governmental organizations (NGOs) active in the fields of natural resource management and rural development, analyze their focal concerns, and establish a partnership in Alabama between such organizations and the Alabama Cooperative Extension System (ACES). Doing so will require detailed case study research on both NGOs and ACES. For a variety of reasons, the timing is propitious for such a project. Previous research funded by the NRICGP has documented social and economic problems associated with timber dependency, including persistent poverty in timber dependent counties. NGOs in Alabama have become increasingly active critics of governmental agencies responsible for managing natural resources and the environment. The ACES is undergoing a rapid transformation away from commodity-oriented programs and towards broader issues associated with sustainable rural development. Yet no mechanism exists to bring citizen voices as articulated by existing NGOs into program development with ACES. Participatory research strategies will be used to document how both NGOs and ACES assess issues associated with sustainable development and natural resource management. The project will culminate with a conference that brings together NGO leaders, ACES staff, and key representatives from other state agencies with responsibilities in the areas of environmental and natural resource management as well as economic and community development.

9701837 Immigration, Employment, Incomes and Poverty in Rural America

Martin, P.L.; Taylor, J.E.

Grant 97-35401-4366**University of California, Davis****Department of Agricultural & Resource Economics****Davis, CA 95616****\$145,000****2 Years**

This project examines "the new rural poverty." Over the past 15 years, 300,000-500,000 immigrants have settled in the cities and towns surrounding major agricultural production centers in the US. This project investigates the impacts of immigrants on the commodities and industries in which they find employment, the cities and towns where the immigrants settle, and the prospects for economic and geographic mobility. The project has three components: 1) The development of a national rural community data base that contains social, demographic, economic, and housing data on census tracts that include 2000-8000 persons across the United States; 2) Econometric analysis of immigration-employment interactions and their implications for incomes and poverty in rural communities, in order to distinguish between two extremes, namely the presence of immigrant workers creates economies of scale and multiplier effects, versus that immigrants take over local jobs and freeze low wages into place; 3) Dissemination of the data base and research findings in Rural Migration News and its associated web site: <http://migration.ucdavis.edu>. Based on data and research, we will evaluate policy options. These can be framed by two extremes; avoid the immigrant integration issues by stopping the immigration, and don't worry about the new rural poverty, because the immigrants settling in rural America are working poor in intact families who remember conditions where they came from.

9701824 Environmental Protection, Economic Development and Waste Disposal Gridlock
Albrecht, S.L.

Grant 97-35401-4444

University of Florida
Department of Health Policy & Epidemiology
Gainesville, FL 32610-0177

\$180,000
2.5 Years

Two contemporary policy movements in the U.S.--one emphasizing environmental protection and the other economic development--form the basis for public conflicts over such issues as the siting of hazardous and toxic waste facilities. While this conflict is often played out in small, rural communities, the issues involved frequently have much larger national significance. For example, the task of siting facilities for the storage of hazardous and toxic wastes is currently one of the country's most difficult challenges, and efforts to site such facilities are bringing a number of interests into direct conflict over the relative merit of protecting environmental resources, on the one hand, or promoting local economic development, on the other. This research seeks to improve our understanding of the forces that affect rural areas faced with proposals that present these policy alternatives. Several research objectives will be addressed, each of which focuses on individual and community-level conflicts associated with these alternative development scenarios. In-depth case studies will be conducted in four area--each reflecting rural isolation and economic vulnerability--where hazardous waste facilities have been proposed. Three complementary research approaches will be used in each community: field ethnography, the analysis of secondary and archival data, and survey research. It is anticipated that the research will provide information that will inform policy-makers concerned with rural community development at the local, state, and national levels, as well as members of the academic community, of major pragmatic considerations associated with hazardous waste facility siting.

9701831 Effects of Local Hospital Transitions on Rural Economic Development
Colgan, C.S.; Bird, D.C.

Grant 97-35401-4560

University of Southern Maine
Muskie Institute of Public Affairs
Portland, ME 04104-9300

Strengthening Award
\$160,000
2 Years

Using a combination of quantitative and qualitative methods, this study will examine the effects of rural hospital transitions (including closings, downsizings, conversions to other levels of care, and mergers) on rural economic development. The study will: develop a significantly improved empirical understanding of the contribution to rural economies of the health sector in general, and hospitals in particular; examine the rural economic development impact of several major federal health care financing and delivery policies; compare and contrast the experiences of a number of rural communities with local hospital transitions; and propose strategies to enable rural communities faced with hospital transitions to respond more effectively to changes in their health services and their local economies. A national Advisory Committee, comprised of recognized experts in the fields of rural economic development and health services research, will provide the project research team with overall guidance; necessary input on research questions and data acquisition; and interpretation of findings within a broader context. Dissemination routes will include Rural Development Perspectives and Rural Conditions and Trends, as well as local cooperative extension and Area Health Education Center (AHEC) agents. In addition to articles about the study, an electronic workbook will be produced and made available to local rural economic development councils and rural hospitals through the Internet web site of the Maine Rural Health Research Center.

9701839 National Adult Family Care Conference to Highlight Latest Research Findings on Adult Family Care
Fetterman, E.; McKenna, C.

Grant 97-34501-4561

National Adult Family Care Organization, Inc.
Amherst, MA 01002-2739

\$10,000
1 Year

Adult Family Care significantly benefits rural communities by providing 1) non-farm income to caregivers, and 2) quality care to rural Americans at a substantial savings to local, state and federal governments. The National Adult Family Care Organization's Research Conference identified research needs, updated information and advanced research in rural Adult Family Care programs nationally. Adult family care provides rural communities with a resource for elders and disabled adults other than institutionalization in an urban setting as well as an income-generating opportunity for rural homeowners as they care for elders and disabled adults in an adult family care form of intervention. The rural family providing care benefits through additional income received via public and private sources; the rural elder or disabled adult benefits as institutionalization is avoided by living in a family setting; the federal and state governments are benefitted through reduced expenditures as care is provided in an adult family care setting versus institutionalization. The cost of nursing homes range from \$4,000 to \$6,000 per month per person, compared to \$700 per month paid to an adult family caregiver for each person. If rural communities in other states adopt the Adult Family Care program, it would help revitalize rural areas for both the rural caregiver and the client in the Adult Family Care program, improving the quality of life for both.

9701835 Devolution and Local Capacity: Implications for Inequality**Pratt, J.E.; Warner, M.****Grant 97-35401-4350****Cornell University****Department of Agricultural Resources and Managerial Economics****Ithaca, NY 14853****\$200,000****2 Years**

Current political discussions of devolution (shifting the responsibility for and execution of various public programs from the Federal and/or State Governments, to local governments) assume local government capacity exists to meet the requirements of increased fiscal and program management responsibility. This is a questionable assumption, especially for rural areas. A better understanding of the impact of past (1970-1990) federal devolution efforts on local capacity will provide a foundation for understanding the potential impacts of the newly implemented block grants that shift responsibility from the Federal Government.

Analysis of the major sources of difference in local government fiscal capacity - economic structure, demographic structure, spatial location, state and federal transfers - will help determine how local capacity differs across space. The research also will assess the extent to which differences in local fiscal capacity affect other measures of social well being in terms of income inequality and physical quality of life. Local government fiscal capacity in the face of devolution will be a critical factor determining spatial inequality in social welfare in the future.

New methods for analysis which more effectively integrate government investment, economic and demographic structure and space in a unified model will be employed: structural modeling with simultaneous paths, and neural networks with data mining. These techniques enable the building of more comprehensive models and the use of "noisy" data, typical of government investment data. Previous work on government investment has been limited by violations of statistical assumptions, and failure to include broader economic factors or allow for simultaneous paths in most models. This research will test the relative efficacy of simultaneous path models and neural networks to provide a critical foundation for analyzing the impacts of devolution on local welfare.

9701762 From Welfare to Work: The Effectiveness of Policy in Rural Labor Markets**Weber, B.A.; Davis, E.E.****Grant 97-35401-4348****Oregon State University****Department of Agricultural and Resource Economics****Corvallis, OR 97331-3601****\$150,000****2 Years**

The goal of this research is to determine the extent to which labor market conditions in rural areas limit the effectiveness of public policy in helping families achieve economic self-sufficiency. Rural workers appear to face substantially greater barriers than urban workers to being fully employed and to moving up the economic ladder. Federal welfare reform and programs for displaced workers have emphasized training and social service supports as critical to successful transitions toward economic self-sufficiency. Less attention has been paid to the role of a healthy regional economy in these transitions. Oregon provides a system of social supports to those moving into employment, including child care subsidies, health insurance, and training programs. The first objective of this study is to analyze the transitions toward economic self-sufficiency (e.g., becoming employed, increasing earnings, or migration) made by rural workers in Oregon who receive social supports. The second objective is to determine the relative importance of three types of factors in affecting these employment transitions: personal characteristics; local labor market conditions; and social supports. The regional variation in economic conditions in rural Oregon provides an opportunity to test the impact of these supports under differing economic conditions. By analyzing employment transitions in different rural areas of the State and comparing them with urban outcomes, the study will enhance our understanding of the effectiveness of these programs in improving the economic strength and well being of rural families and communities.

9701844 Industrial Restructuring and Income Inequality in U.S. Counties**McLaughlin, D.K.****Grant 97-35401-4349****Pennsylvania State University****Department of Agricultural Economics and Rural Sociology****University Park, PA 16802-5600****\$170,000****3 Years**

Growing polarization of household income in the United States is a key issue related to the future well-being of our democratic society. Growing inequality has been linked to industrial restructuring, changes in household structure, and changing labor supply. These changes, which are influenced by national policies, play out differently over geographic space. The consequences of industrial restructuring vary with the existing economic and social base in a local area, as well as the subsequent changes that occur. We examine changing household income inequality across U.S. counties from 1980 to 1990. Because our intent is to assess whether household incomes are polarizing, we utilize newly developed relative distribution methods to measure the extent of income polarization. We have three objectives: to document the spatial patterns of household income inequality and changes in household income equality in U.S. counties from 1980 to 1990; to test the relative importance of industrial structure, household structure, and labor supply in explaining differences in household income inequality between U.S. counties in 1980

to 1990; and to examine how these explanations influence change in household income inequality within U.S. counties from 1980 to 1990. Ultimately, these detailed county-level analyses will provide previously unavailable information about how the base economic and social structure in a county combine with industrial restructuring and changes in household structure and labor supply to influence the polarization of household incomes. From a policy perspective, this local area analysis is essential for evaluating the potential local repercussions of national policy decisions.

9701836 Organizing Local Economic Development in Rural America

Green, G.P.

Grant 97-35401-4353

University of Wisconsin, Madison

Department of Rural Sociology

Madison, WI 53706

\$110,000

3 Years

This research examines how local economic development activities are organized (whether they are the responsibility of public, private, or quasi-public authorities) in rural America and evaluates the effectiveness of various economic development policies and activities. Surveys will be administered to a sample of local governments and economic and social development organizations in rural areas to obtain information on current and past economic development activities, resources committed to these programs, and the level of interaction between local government officials and the private sector in the area of economic development. Additional information will be obtained from firms on the quality of jobs that have been created through economic development incentives and programs. Finally, these data will be merged with census data to assess the outcomes and impacts of economic development activities on job creation and income generation. The analysis will provide evidence on what types of activities are most effectively conducted by local economic development organizations versus local governments. In addition, the research should help economic development practitioners identify under what conditions various policies and activities are most likely to generate good jobs in Rural America.

9701756 Labor Market Gatekeepers: New Roles for Staffing Services in Rural Employment Relationships

Tiggs, L.M.

Grant 97-35401-4352

University of Wisconsin, Madison

Department of Rural Sociology

Madison, WI 53706-1562

\$150,000

2 Years

This project investigates changes in local labor market processes, asking how and why industrial employers in various localities are using temporary help supply (THS) services. We will study manufacturers' use of THS services, with a special focus on the extent and effects of using THS firms to recruit, screen, and hire employees on a "temporary-to-permanent" basis. Specifically, we will assess (1) the extent to which temporary workers are used by manufacturers; (2) how they are being used; and (3) why firms are using temporary workers. Original data will be collected through a telephone survey of representative sample of Wisconsin's manufacturing employers. These data will be supplemented with information from in-person interviews with a smaller sample of these employers in four specially selected regions. The survey will be used to compare the practices and experiences of firms in rural and urban localities. The interviews will provide detailed information about the ways hiring practices are changing and about how these changes affect employment relations and worker well-being. Results will assist policy makers and community development practitioners in their efforts to improve local labor market conditions.

9701737 The impacts of Amenity Values on Agricultural Lands Conservation

McLeod, D.; Reiners, W.; Whipple, G.

Grant 97-35401-4347

University of Wyoming

Department of Agricultural Economics

Laramie, WY 82071-3354

\$165,000

2 Years

Rural lands provide an essential component for agriculture as well as for rural homesites. The Rocky Mountain region is experiencing an unprecedented rate of rural residential development. This trend has important economic and environmental amenities found on agricultural lands. Such amenities consist of open space which may provide scenic views, wildlife habitat and access to private and/or public lands recreation. The first objective is to determine the preferences residents and landowners have for maintaining various amounts and types of agricultural lands. This analysis will measure the extent to which private lands possess public good characteristics. Public goods are things such as scenery that are consumed by one without reducing the availability of the good (view) for another. It is often difficult to exclude consumers (those who enjoy the view) from partaking of these goods. Dichotomous choice referendum models will be used to provide public preference estimates. These models are akin to voting models where the choice is whether to approve a proposed land use control. The second objective is to determine which factors are contributing to the conversion of land from agricultural to residential uses. A parcel with fishing access or a view of alpine peaks should command a higher price than one lacking these characteristics. Hedonic price models using geographic information (GIS) delineated spatial variables will be utilized to meet this objective.